IN THE CLAIMS

Please amend claims 1 through 11 and add claims 12 through 17 as follows:

B1

1. (Amended) A displacement device with a first part and a second part which are displaceable relative to one another in at least an X-direction and a Y-direction perpendicular thereto, wherein said first part has a carrier which extends substantially parallel to said X-direction and said Y-direction and on which a system of magnets is fastened in a pattern of rows extending parallel to said X-direction and columns extending parallel to said Y-direction, wherein an equal distance is present each time between the rows and between the columns, wherein in each said row and in each said column magnets of a first kind (N) with a magnetization direction perpendicular to said carrier and directed to said second part and magnets of a second kind (Z) with a magnetization direction perpendicular to said carrier and directed away from said second part are positioned in alteration, and wherein a magnet of a third kind (H) with a magnetization direction directed from a magnet of said second kind (Z) to a magnet of said first kind (N) is arranged between the magnets of said first kind (N) and said second kind (Z), while said second part is provided with a system of electric coils with at least one electric coil of a first kind (C1), with current conductors situated in a magnetic field of said system of magnets and enclosing an angle of substantially 45° with said X-direction, and with at least one electric coil of a second kind (C2), also with current conductors situated in said magnetic field of said system of magnets and enclosing an angle of substantially 45° with said X-direction but directed perpendicular to said current conductors

B1 cont.

of said first electric coil (C1), wherein said displacement device is provided with a number of sensors sensitive to magnetic fields, which sensors supply a signal which is dependent on the local mutual positions of said magnets of said first part relative to said electric coils of said second part in a region where these two parts overlap.

2. (Amended) The displacement device of claim 1, wherein said sensors sensitive to magnetic fields are present in that part of said first part and said second part in which said coil systems are situated.

3. (Amended) The displacement device of claim 1, wherein said sensors sensitive to magnetic fields comprise Hall sensors.

4. (Amended) The displacement device of claim 3, wherein said sensors sensitive to magnetic fields have one or several linear arrays of individual Hall sensors which are situated at regular distances to one another.

5. (Amended) The displacement device of claim 4, wherein

said magnets of said first kind (N) and said second kind (Z) are of an identical square shape with equal sides, and said magnets of said third kind (H) have an oblong shape with longer sides and shorter sides, the longer sides of a magnet of said third kind (H) adjoining said sides of a magnet of said first kind (N) and said second kind (Z) and being equally long as said sides of said magnets of said first and second kinds, while the ratio of the length of a shorter side of a magnet of said third kind (H) to the length of a longer side lies between 0.25 and 0.59, and

B1 cont.

the distance between the centers of the outermost Hall sensors of a linear array is equal to 2n x p, with n∈{1, 2, 3, ...}, and p is the pole pitch of poles of equal orientation of said magnets of said first part in a diagonal direction in said XY-plane at an angle of -45° or +45° to said X-direction and said Y-direction.

6. (Amended) The displacement device of claim 5, wherein said linear arrays present at least have a first linear array in a first diagonal direction and a second linear array in a second diagonal direction perpendicular to said first.

7. (Amended) The displacement device of claim 6, wherein said first linear array belongs to a system of two arrays of the same orientation situated next to one another at a mutual distance of 1/2p + n x p, and said second linear array belongs to a system of two arrays of equal orientation situated next to one another at a mutual distance of 1/2p + n x p, with n∈{1, 2, 3, ...}.

8. (Amended) The displacement device of claim 7, wherein a third system of linear arrays is present at a distance from and in the extended direction of one of said two other arrays.

9. (Amended) The displacement device of claim 7, wherein said vertical distance between said first and said second part can be determined from amplitudes of signals of said sensors of two arrays which belong to one another.

10. (Amended) The displacement device of claim 4, wherein

B1 cncl'd.

said electric coils are of an approximately rectangular shape and as a result have mutually opposed parallel straight sides,

said electric coils of each coil system are arranged such that their corresponding sides are positioned parallel to one another, and

each linear array is arranged in a position parallel to a side of the immediately adjacent electric coil and at equal distances to the ends of said side.

11. (Amended) The displacement device of claim 4, wherein said individual Hall sensors of each array are connected to an input of a summation amplifier via respective individual differential amplifiers.

NEWLY ADDED CLAIMS

B2

12. A displacement device with a first part and a second part which are displaceable relative to one another in at least an X-direction and a Y-direction perpendicular thereto, wherein said first part has a carrier which extends substantially parallel to said X-direction and said Y-direction and on which a system of magnets is fastened in a pattern of rows extending parallel to said X-direction and columns extending parallel to said Y-direction, wherein an equal distance is present each time between the rows and between the columns, wherein in each said row and in each said column magnets of a first kind (N) with a magnetization direction perpendicular to said carrier and directed to said second part and magnets of a second kind (Z) with a magnetization direction perpendicular to said carrier and

B2 cont.

directed away from said second part are positioned in alteration, and wherein a magnet of a third kind (H) with a magnetization direction directed from a magnet of said second kind (Z) to a magnet of said first kind (N) is arranged between the magnets of said first kind (N) and said second kind (Z), while said second part is provided with a system of electric coils with at least one electric coil of a first kind (C1), with current conductors situated in a magnetic field of said system of magnets and enclosing an angle of substantially 45° with said X-direction, and with at least one electric coil of a second kind (C2), also with current conductors situated in said magnetic field of said system of magnets and enclosing an angle of substantially 45° with said X-direction but directed perpendicular to said current conductors of said first electric coil (C1), wherein said displacement device is provided with a number of sensors sensitive to magnetic fields, which sensors supply a signal which is dependent on the local mutual positions of said magnets of said first part relative to said electric coils of said second part in a region where these two parts overlap, said sensors sensitive to magnetic fields being Hall sensors which are situated at regular distances to one another, and wherein said magnets of said first kind (N) and said second kind (Z) are of an identical square shape with equal sides, and said magnets of said third kind (H) have an oblong shape with longer sides and shorter sides, said longer sides being equally long as said equal sides of said magnets of said first kind (N) and said second kind (Z), while the ratio of the length of said shorter side of said magnet of said third kind (H) to the length of said longer side thereof lies between 0.25 and 0.59.

13. The displacement device of claim 12, wherein the distance between the centers of the outermost Hall sensors of a

B2 cont'd.

linear array is equal to 2n x p, with $n \in \{1, 2, 3, ...\}$, and p is the pole pitch of poles of equal orientation of the magnets of said first part in a diagonal direction in said XY-plane at an angle of -45° or +45° to said X-direction and said Y-direction.

14. The displacement device of 13, wherein said linear arrays present at least comprise a first linear array in a first diagonal direction and a second linear array in a second diagonal direction perpendicular to said first.

15. The displacement device of claim 14, wherein said first linear array belongs to a system of two arrays of the same orientation situated next to one another at a mutual distance of 1/2p + n x p, and the second linear array belongs to a system of two arrays of equal orientation situated next to one another at a mutual distance of 1/2p + n x p, with $n \in \{1, 2, 3, ...\}$.

16. The displacement device of claim 15, wherein a third system of linear arrays is present at a distance from and in the extended direction of one of said two other arrays.

17. The displacement device of claim 15, wherein the vertical distance between said first and said second part can be determined from amplitudes of signals of said sensors of two arrays that belong to one another.

REMARKS

Claims 1 through 11 are pending in the present application and claims 12 through 17 have been newly added.